IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims:

Claims 8-23 (canceled)

Claim 24 (currently amended): An expander comprising:

a cylinder,

a shaft having an eccentric portion,

a roller which is fitted to said eccentric portion and which eccentrically rotates inside said cylinder,

a closing member for closing both end surfaces of said cylinder,

a vane for partitioning a space formed by said cylinder, said roller and said closing member into two working chambers,

a suction hole through which working fluid flows into said working chamber, and

a single discharge hole through which the working fluid is discharged from said working chamber into a discharge space,

wherein said single discharge hole is provided with a differential pressure regulating valve which is operated by a difference between pressure in said working chamber and pressure in said discharge space; and

wherein said differential pressure regulating valve is closed when the expansion stroke is completed, and said differential pressure regulating valve is ~~opened~~ open when the discharge stroke is completed.

Claim 25 (previously presented): The expander according to claim 24, wherein said differential pressure regulating valve is closed when the pressure in said working chamber is lower than the pressure in said discharge space.

Claim 26 (previously presented): The expander according to claim 25, wherein said differential pressure regulating valve is a reed valve.

Claim 27 (previously presented): The expander according to claim 25, wherein said differential pressure regulating valve has a circular conical valve portion.

Claim 28 (previously presented): The expander according to claim 24, wherein fluid which expands from liquid phase or supercritical phase to gas-liquid two-phase is used as the working fluid.

Claim 29 (previously presented): The expander according to claim 28, wherein the expander is utilized in a heat pump cycle which uses carbon dioxide as the working fluid.

Claim 30 (previously presented): The expander according to claim 29, wherein a shaft of said expander is directly connected to a shaft of a compressor.

Claim 31 (previously presented): The expander according to claim 25, wherein fluid which expands from liquid phase or supercritical phase to gas-liquid two-phase is used as the working fluid.

Claim 32 (previously presented): The expander according to claim 26, wherein fluid which expands from liquid phase or supercritical phase to gas-liquid two-phase is used as the working fluid.

Claim 33 (previously presented): The expander according to claim 27, wherein fluid which expands from liquid phase or supercritical phase to gas-liquid two-phase is used as the working fluid.

Claim 34 (previously presented): The expander according to claim 31, wherein the expander is utilized in a heat pump cycle which uses carbon dioxide as the working fluid.

Claim 35 (previously presented): The expander according to claim 32, wherein the expander is utilized in a heat pump cycle which uses carbon dioxide as the working fluid.

Claim 36 (previously presented): The expander according to claim 33, wherein the expander is utilized in a heat pump cycle which uses carbon dioxide as the working fluid.

Claim 37 (previously presented): The expander according to claim 34, wherein a shaft of said expander is directly connected to a shaft of a compressor.

Claim 38 (previously presented): The expander according to claim 35, wherein a shaft of said expander is directly connected to a shaft of a compressor.

Claim 39 (previously presented): The expander according to claim 36, wherein a shaft of said expander is directly connected to a shaft of a compressor.